

CLAIMS

What is claimed is:

1 1. A slider scale package assembly for electrically coupling a slider/magnetic
2 recording (MR) head to a head interconnect circuit in a disc drive, comprising:
3 the slider/MR head; and
4 means for attaching to a back of the slider/MR head which turns the slider/MR
5 head into the slider scale package with at least one interconnect pad disposed at the back
6 of the slider/MR head.

1 2. A slider scale package assembly for electrically coupling a slider/magnetic
2 recording (MR) head to a head interconnect circuit in a disc drive, comprising:
3 the slider/MR head; and
4 a flex circuit attached to a back of the slider/MR head which turns the slider/MR
5 head into the slider scale package with at least one interconnect pad disposed at the back
6 of the slider/MR head.

1 3. The slider scale package assembly of claim 2, wherein the flex circuit further
2 includes a conductive material, the at least one interconnect pad is electrically connected
3 to the conductive material of the flex circuit, the slider/MR head includes at least one
4 bond pad, the conductive material of the flex circuit is electrically bonded to the at least
5 one bond pad of the slider/MR head.

1 4. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at a front end of the slider/MR head.

1 5. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at the back of the slider/MR head.

1 6. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at the back of the slider/MR head via a bonding ball.

1 7. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at a front end of the slider/MR head via a bonding ball.

1 8. The slider scale package assembly of claim 3, wherein the flex circuit includes
2 first, second, third, and fourth interconnect pads, and the slider/MR head includes first,
3 second, third, and fourth bond pads.

1 9. The slider scale package assembly of claim 8, wherein the first and second bond
2 pads are electrically coupled to a first pair of positive and negative polarities of the
3 slider/MR head for reading data, respectively, the third and fourth bond pads are
4 electrically coupled to a second pair of positive and negative polarities of the slider/MR
5 head for writing data, respectively.

1 10. The slider scale package assembly of claim 9, wherein the first, second, third, and
2 fourth interconnect pads are arranged such that the polarities of the bond pads of the head

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3 interconnect circuit match with polarities from the head interconnect circuit.

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1 11. The slider scale package assembly of claim 10, wherein the first and second
2 interconnect pads are electrically connected to the first and second bond pads of the
3 slider/MR head, respectively, and the third and fourth interconnect pads are electrically
4 connected to the third and fourth bond pads of the slider/MR head, respectively.

1 12. The slider scale package assembly of claim 10, wherein the first and second
2 interconnect pads are electrically connected to the second and first bond pads of the
3 slider/MR head, respectively, and the third and fourth interconnect pads are electrically
4 connected to the fourth and third bond pads of the slider/MR head, respectively.

1 13. The slider scale package assembly of claim 3, further comprising a plurality of
2 flex circuits being disposed in a sheet format.

1 14. The slider scale package assembly of claim 13, wherein the plurality of flex
2 circuits in the sheet format are dividable into a plurality of individual flex circuits.

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1 15. A head gimbal assembly (HGA) for supporting a slider/magnetic recording (MR)
2 head in a disc drive, comprising:

3 a suspension supporting the slider/MR head;
4 a head interconnect circuit being attached to and disposed along the suspension,
5 the head interconnect circuit including a conductive material; and
6 a slider scale package for electrically coupling the slider/MR head to the head
7 interconnect circuit, wherein the slider scale package comprises a flex circuit attached to

8 a back of the slider/MR head which turns the slider/MR head into the slider scale package
10 with at least one interconnect pad disposed at the back of the slider/MR head, the at least
11 one interconnect pad being electrically bonded to the conductive material of the head
interconnect circuit.

1 16. The HGA of claim 15, wherein the flex circuit further includes a conductive
2 material, and the slider/MR head includes at least one bond pad, the conductive material
3 of the flex circuit is electrically connected to the at least one interconnect pad at a first
4 end and to the at least one bond pad of the slider/MR head at a second end.

1 17. The HGA of claim 16, wherein the flex circuit includes first, second, third, and
2 fourth interconnect pads, and the slider/MR head includes first, second, third, and fourth
3 interconnect pads.

1 18. The HGA of claim 17, wherein the first, second, third, and fourth interconnect
2 pads are arranged such that the polarities of the bond pads of the head interconnect circuit
3 match with polarities from the head interconnect circuit.

1 19. The HGA of claim 15, further comprising a plurality of flex circuits being
2 disposed in a sheet format, the plurality of flex circuits in the sheet format being dividable
3 into a plurality of individual flex circuits

1 20. The HGA of claim 16, wherein bonding of the conductive material of the flex
2 circuit to the slider/MR head and bonding of the at least one interconnect pad of the flex
3 circuit to the conductive material of the head interconnect circuit are done in a separate

4 automated process.

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